REMARKS

Entry of this Amendment and reconsideration and allowance of this application, as amended, are respectfully requested. After the Examiner considers these amendments and remarks, the undersigned would appreciate an opportunity to conduct a personal interview with the Examiner. The Examiner is invited to call the undersigned to schedule an interview.

SPECIFICATION SUPPORT FOR CLAIMS

The specification stands objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The Examiner requested correction with regard to the claim 18 limitation of "providing a substrate having a hydrophobic (lower) layer and a hydrophilic (upper) film arranged on the hydrophobic layer" lacks explicit basis in the specification. According to the Examiner, the specification recites films with high and low wettability (Page 15, lines 9-13), but fails to explicitly recite "a substrate having a hydrophobic layer and a hydrophilic film arranged on the hydrophobic layer."

Claims 18 and 19 have been amended so that they are consistent with the originally filed specification. The term "hydrophobic layer" has been amended to –a lower layer having low wettability--. The term "hydrophilic film" has been amended to –an upper layer having high wettability--.

PRIOR ART REJECTIONS

Claims 18-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-287922 in view of Taniyama et al (US 6,096,233). Calims 24-29 are cancelled by this amendment. As to claims 18-23, this ground of rejection is respectfully traversed.

According to claim 18,

(a) When the chemical liquid and the rinse liquid are simultaneously supplied on to the substrate, the rinse liquid supplying position follows the chemical liquid supplying position moving from a periphery to the center of the substrate such that the relative positional relationship between the chemical liquid supplying position and the rinse liquid supplying position maintains essentially constant.

(b) The period of time from the arrival of the chemical liquid supplying position to the arrival of the rinse liquid supplying position is determined such that the hydrophilic film is partially removed by the passage of the area (chemical liquid area) defined between the chemical liquid supplying position and the rinse liquid supplying position, and then is completely removed when the area (mixed liquid area) covered with the mixed liquid is passing.

One advantage of our claim 18 invention can be understood from the description of the first embodiment described in our specification at page 9, lines 8 to 15, and page 10, lines 20 to 28. Our inventions solve problems associated with the method described in JP4-287922 (primary reference). This is discussed in the BACKGROUND portion of our specification. Our inventions achieve reduction in consumption of the chemical liquid which is much more expensive than the rinse liquid; avoids the damage of the underlying layer; and prevents the underlying layer from being exposed to the surrounding atmosphere.

Applicant respectfully disagrees with the Examiner's position that the claim 18 invention is obvious over JP4-5287922 in view of Taniyama.

It would NOT have been obvious to move the nozzles as cited in the method of JP 4-287922 in part because Taniyama teaches that it is a useful technique for controlling the treatment rate to a predetermined rate in order to optimize the final result for circular, spinning substrates.

Taniyama fails to disclose or suggest the use of a chemical liquid nozzle (etchant nozzle) and a rinse liquid nozzle (diluent nozzle) in a manner specified by claim 18. Even if JP4-287922 and Taniyama could be combined (which is inappropriate), the resulting combination would not result in the claim 18 invention. In Applicant's view, such a combination of JP4-287922 and Taniyama would, at best, be an arrangement wherein a chemical liquid nozzle moves from a periphery to the center of a wafer while discharging a chemical liquid, and thereafter the supply of the chemical liquid and the rinse liquid would overlap at the center of the wafer.)

Taniyama's method corrects the thickness distribution of a film (having concave or convex profile as best shown in Figs. 1, 10 and 13) formed on a wafer by etching the film non-uniformly. In Taniyama, the operation of the etchant nozzle and the diluent nozzle is controlled such that an amount of etch is larger at thick portions, while an amount of each is

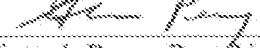
smaller at thin portions. This is not our claimed invention. Moreover, Taniyama's method does not remove the film to such an extent that the underlying layer is exposed.

With regard to the Examiner's comments "Response to Arguments" at page 5, last paragraph of the office action, the Examiner suggests that "partially removed" is obvious. Applicant respectfully disagrees. In the context of the claimed inventions, "partially removed" in combination with "partially exposed" is not obvious at all. Where is this suggested in the art?

This amendment is being filed with a three month extension of time . Applicants do not anticipate any further fees due. If any fees are due in connection with the filing of this Amendment and Request for Reconsideration, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 033082M201.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: 

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